

1 ABSTRACT OF THE DISCLOSURE

2 The present invention provides electronic communication devices,
3 methods of forming electrical communication devices, and communications
4 methods. An electronic communication device adapted to receive
5 electronic signals includes: a housing comprising a substrate and an
6 encapsulant; an integrated circuit provided within the housing and
7 comprising transponder circuitry operable to communicate an
8 identification signal responsive to receiving a polling signal; an antenna
9 provided within the housing and being coupled with the transponder
10 circuitry; and a ground plane provided within the housing and being
11 spaced from the antenna and configured to shield some of the
12 electronic signals from the antenna and reflect others of the electronic
13 signals towards the antenna. A method of forming an electronic signal
14 communication device includes providing a substrate having a support
15 surface; providing a conductive layer adjacent at least a portion of the
16 support surface; providing a dielectric layer over the conductive layer;
17 providing an antenna over the dielectric layer; coupling an integrated
18 circuit with the antenna; and encapsulating the antenna, the dielectric
19 layer, and the integrated circuit using a flowable encapsulant.

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